

Genetics Research Opportunities for Community Colleges

Houston Community College

Project # 2006-03488

\$200,000

SERD need areas

- Student experiential learning
- Faculty preparation & enhancement for teaching
- Curricula design, materials development and library resources
- Scientific instrumentation for teaching
- Student recruitment, retention & educational quality

Houston Community College

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Collaborators

- Texas A&M University - Institute for Plant Genomics and Biotechnology
- University of Houston - Victoria
- USDA Agriculture Research Service - Southern Plains Region
- Cornerstone Academy, a public middle school

Objective 1

- Prepare and motivate 84-133 underrepresented students to complete a college education for bioscience careers
- institutionalize a research component in an HCCS genetics course
- Integrate experiential learning in general biology courses

Objective 2

- Present professional development workshops and seminars to HCC faculty

Objective 3

- Disseminate information and products of the program to Houston middle and high school teachers, and to Texas college/university faculty

Student activities

- Expose at least 2500 general biology students a year to new hands-on activities in the classroom
- Summer internships for four students at ARS
- Institutionalize a sorghum genotyping research project in HCCS genetics classes:

Sorghum Genotyping Project

- Texas A&M University sends sorghum seeds
- HCC students isolate DNA and perform PCR to amplify STRs
- PCR products analyzed on University of Houston - Victoria DNA analyzer



- Field trips, seminar attendance, symposium attendance, and hands-on workshops



University of Houston  Victoria

- A **"Discover Your DNA Day"** for 7th graders at Cornerstone Academy, a public middle school, with 16-20 HCC student mentors/facilitators



Professional Development Workshops

- Two week-long workshops on genomics research to at least 12 biology faculty at HCC's Northwest and Central colleges
- Three 3-hour workshops for 36-40 biology faculty system-wide to encourage incorporation of experiential learning in the classroom



Dissemination

- Establish a web site about the program:
<http://nwc.hccs.edu/genetics>
- Present program in a seminar for HCCS, University of Houston faculty, and HISD science teachers
- Publish information with the Texas Collaborative for teaching Excellence and the Texas Consortium for Hispanic Serving Institutions

Evaluation

- Attendance/stipend/enrollment/grades records
- "Before and after", and follow-up surveys and evaluations
- Student retention and transfer records
- Web site hits and queries, update records, other requests for information
- Course materials and other products
- Student applications for internships; internship supervisor reports